

CASE FR-7095

REMARKS

Claims 1-6, 8-23, 32-35, and 40-84 are in the case.

New Claims 73 and 74 are supported in the Specification at Page 3, paragraph 0009, which makes clear that the composition comprises either a polyamide or polyester. New Claim 75 has support on Page 8, paragraph 0023. Support for new Claim 76 is on Page 8, paragraph 0027. New Claim 77 is supported at Page 16, paragraph 0045. Support for new Claim 78 is on Page 2, paragraph 0008; new Claim 79 is supported at Page 2, paragraph 0007 and at Page 17, paragraph 0045, subitem R08. Support for new Claim 80 is found in the same places as for corresponding elements of Claims 77-79. New Claim 81 is supported at Page 8, paragraph 0028. Support for new Claim 82 is on Page 13, paragraph 0038; additional support is on Page 17, paragraph 0045, subitem R13. New Claims 83 and 84 are supported in the Specification at Page 6, paragraph 0016, subitems h) and i). It is believed that no new fee is due for the added claims, in light of the claims that have been canceled. Some of the canceled claims were contained in the multiple-dependent claims.

By the above amendment, Claim 1 now specifies that the blend has an improved comparative tracking index as compared to said thermoplastic polyamide or said thermoplastic polyester polymer. Support for this amendment can be found in the Specification on Page 1, paragraph 0002, and Pages 1-2, paragraphs 0004, 0005, and 0006. Claim 1 as amended incorporates the limitations of canceled Claim 7, specifying that the olefin-based polymer is a propylene homopolymer having a melt flow index of not more than about 5 grams/10 minutes. Support for this amendment can be found in the Specification on Page 12, paragraph 0033.

These remarks are keyed to the numbering given in the Action. Omitted numerals represent items in the Action which require no direct response since they set forth statutory quotations or other similar information presented for Applicants' benefit.

2. The rejection of Claims 1-5, 7-19, 24-68, 70 and 72 under 35 U.S.C. § 112, first paragraph is in error and should be withdrawn. The Action suggests that there is lack of enablement as two cited references teach that zinc sulfide and zinc borate are ineffective as flame retardant synergists in PET. While this may be true in the systems referred to by Hecht and by Garrison, Jr., the references do not refer to Applicants' compositions, and have not

CASE FR-7095

stated that these components are used only as flame retardant synergists. This interpretation has arisen from the Examiner, not Applicants' disclosure. Applicants' claims and disclosure identify zinc-based components that can be used in the compositions claimed. As is well known to those of ordinary skill in the art, zinc borate and zinc sulfide are white in color, and thus can be used as whitening agents (see for example, U.S. 6,528,558 B2 at column 3, lines 5). At page 11, in Paragraph 0032, Applicants point out that mixtures of zinc sulfide and zinc borate provide finished polymer compositions having lighter coloration than when using only zinc borate.

Some of the references cited by the Examiner in the following § 102 and § 103 rejections also teach the use of zinc borate as beneficial. Fuhr et al. teaches a flameproofed composition, in which a zinc borate is used as a "flameproofing reinforcing agent" (Claim 1). Nakahashi et al. states, at column 6, lines 47-49, "Zinc borate is also known as an effective auxiliary flame retardant."

References have been discovered which teach differently from the references cited by the Examiner – that zinc borate and zinc sulfide are beneficial ingredients. U.S. Pat. No. 4,713,407, to Bailey et al., describes and claims zinc borate as an "auxiliary flame retardant." First, because the presence of zinc borate is required by Claim 1, presumably zinc borate is a necessary component for achieving a composition with desirable properties (increased flame retardancy, good mechanical properties, heat resistance, and moldability; see Abstract and column 1, lines 33-36). In addition, the inventive Examples of this patent use zinc borate in conjunction with polyethylene terephthalate, without detrimental effect. Further, U.S. Pat. No. 6,528,558 B2, to Lewin, requires the presence of a "sulfur containing material," (Claim 1), which material includes zinc sulfide (column 1, lines 58-64). Many of the inventive examples of this patent use zinc borate with polyethylene terephthalate, and one example (Example 36) uses both zinc borate and zinc sulfide with polyethylene terephthalate. Moreover, the Specification of this patent states, at column 3, lines 6-9, "It has surprisingly been found that already small amounts of ZnS, in the range of 1-3 weight % of a polymer composition, yield a pronounced flame retardancy effect." Thus, it is felt that the rejection in the present case of those claims which are directed to the use of zinc borate and/or zinc sulfide is wholly inappropriate and should be withdrawn.

4. The rejection of Claims 1-6, 8-10, 17-23, 32-43, 53-61, and 64-72 as amended under 35 U.S.C. § 102 (b or e) is also in error and should be withdrawn. The Examiner has not

CASE FR-7095

established a *prima facie* case of novelty. Each reference has listed somewhere within it some of the various elements of the presently claimed invention, but none of the cited references actually teaches the a composition comprising the elements as claimed. None of the seven references cited teaches a polypropylene homopolymer having a melt flow index of not more than 5 grams/10 minutes. What the references do contain are long lists of compounds within general categories, from which certain compounds have been chosen in order to make the rejection. The number of combinations of ingredients in each cited reference is quite large, and the likelihood that someone would select those chosen by the Applicants is small.

In this connection, anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Company*, 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984), quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 U.S.P.Q. 193 (Fed.Cir.1983); *SSIH Equip. S.A. v. USITC*, 718 F.2d 365, 218 U.S.P.Q. 678 (Fed.Cir.1983). None of the seven references cited for the anticipation rejection contains an embodiment in which all of the elements of the present invention are arranged as in Applicants' claims.

5. Claims 1-6, 8-10, 17-23, 32-43, 53-59, and 70-72 as amended are not anticipated by any of the cited references.

Fuhr et al. does not teach olefin homopolymers, much less a polypropylene homopolymer, particularly one with a melt flow index of not more than about 5 grams/10 minutes. Fuhr et al. also does not teach that its compositions are suitable for use in electrical applications, as those of the present invention are.

Kyo et al. does not teach that an olefin-based polymer is required, nor does it teach a polypropylene homopolymer having a melt flow index of not more than about 5 grams/10 minutes. Both a polyamide and a polyester are required in the compositions taught by Kyo et al., another difference from the present invention. Kyo et al. also limits its purposes to "without deteriorating . . . the electrical properties . . . of the composition." See column 2, lines 12-15. In contrast, Claim 1 of the present invention requires the composition to have *improved* electrical properties, particularly the comparative tracking index. Furthermore, Kyo et al. does not make it clear to which electrical properties it refers.

Nakahashi et al. does not teach that an olefin-based polymer is required, nor does it teach a polypropylene homopolymer having a melt flow index of not more than about 5

CASE FR-7095

grams/10 minutes. Nakahashi et al. has as its purpose providing flame-retarded polyamide compositions of improved mechanical strength (column 1, lines 51-67; column 7, lines 48-52). There is no disclosure of improved electrical properties.

Gareiss et al. does not teach that an olefin-based polymer is required, nor does it teach homopolymers, especially a polypropylene homopolymer having a melt flow index of not more than about 5 grams/10 minutes.

Ogo et al. does not teach an olefin-based homopolymer is required, nor does it teach a polypropylene homopolymer having a melt flow index of not more than about 5 grams/10 minutes. The objective taught by Ogo et al. is non-contamination of a mold used in making molded articles (column 1, lines 7-11).

Tjahjadi et al. does not teach that an olefin-based polymer is required, nor does it teach that the polypropylene homopolymer should have a melt flow index of not more than about 5 grams/10 minutes.

The polyesters in Chisolm et al. are required to have sulfonate units, unlike the polyesters used in the present invention. Chisolm et al. does not teach that an olefin-based homopolymer is required, nor does it teach a polypropylene homopolymer having a melt flow index of not more than about 5 grams/10 minutes. The objectives recited in Chisolm et al. do not include improved electrical properties (column 2, lines 15-20).

Rejected Claims 60, 61, and 64-69 concern a flame retardant additive composition. Fuhr et al. does not teach any additive compositions. Kyo et al. does not teach additive compositions which comprise an olefin-based polymer, in contrast to Claims 60, 61, and 64-69 of the present invention. Nakahashi et al. does not teach additive compositions. Gareiss et al. does not teach additive compositions. Ogo et al. does not teach additive compositions. Tjahjadi et al. does not teach additive compositions. Chisolm et al. does not teach additive compositions that comprise a zinc compound and/or an olefin-based polymer.

8. The rejection of Claims 1-72 under 35 U.S.C. § 103(a) is also in error and should be withdrawn. The Examiner has not established a *prima facie* case of obviousness. The Examiner's contention that "all of applicants' limitations are known" is individually true — each limitation of the present invention is known somewhere in a cited reference. However, the limitations of the invention are not known together in references for which there is any suggestion or motivation to combine the references. More specifically, for example, Mathews et al., Kinoshita et al., Kamei et al., and Basset et al. appear to have been cited to prove that polypropylene having melt flow indices with the limitations disclosed by Applicants are

CASE FR-7095

known. Without more, this does not establish a *prima facie* case of obviousness. Further, the Examiner's statement that the use of materials and limitations scattered in the various cited references is erroneous as a matter of law. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). For example, in *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998), the combination of cited references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obviousness was held improper. Finally, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

9. Claims 1-72 as amended are not made obvious by the cited references. There is no motivation to combine any of the cited secondary references (Mathews et al., Kinoshita et al., Hecht et al., Frye et al., Garrison, Jr., Myszak, Jr., Bryant et al., Kamei et al., Basset et al.,) with any of the cited primary references (Fuhr et al., Kyo et al., Nakahashi et al., Ogo et al., Tjahjadi et al., and Chisolm et al.).

Regarding rejected Claims 1-59 and 70-72, the discussion is organized in the order in which the secondary references were cited in the Office Action. At least some of the secondary references teach away from the present invention, specifically Hecht et al., Garrison, Jr., Frye, and Kamei et al. (see discussion below). It is well-settled that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Mathews et al. concerns polyester/polypropylene blends for making opaque films. Primary references Fuhr et al., Nakahashi et al., Ogo et al., and Tjahjadi et al. concern polyamides, not polyesters, and thus there is no motivation or suggestion to combine Mathews et al. with any of these primary references. First, primary reference Kyo et al. concerns polyester/polyamide blends, not polyester/polypropylene blends, and second, such a combination would yield polyester/polypropylene/polyamide blends, rather than those of

CASE FR-7095

the present invention, which do not include polyester/polyamide blends. There is no suggestion or motivation to combine primary reference Chisolm et al. with secondary reference Mathews et al. Even should these references be combined, the present invention is not made obvious, since the combination would not suggest that one could obtain improved electrical properties. Note also that Chisolm et al. teaches sulfonated polyesters, while Mathews et al. does not include sulfonated polyesters in its disclosure. No zinc compound is taught by Mathews et al. Further, Mathews et al. does not teach the use of any flame retardant whatsoever in the compositions therein. In contrast, *all* of the primary references teach the use of a halogenated flame retardant. There is no suggestion or motivation to combine any of the primary references with Mathews et al.; thus, any of the primary references in view of Mathews et al. does not make the present invention obvious.

Kinoshita et al. concerns laminated polyester films that also contain an acrylic or urethane. There is no motivation to combine this reference with any of the primary references. Such combination would not have yielded the present invention in any case, as the presently claimed invention is directed to a molding composition, as are also primarily references Fuhr et al. and Tjahjadi et al. Furthermore, Kinoshita et al., like Mathews et al., does not teach the use of any flame retardant whatsoever in its disclosed compositions. Because *all* of the primary references teach the use of a halogenated flame retardant, there is no suggestion or motivation to combine any of the primary references with Kinoshita et al. Thus, any of the primary references in view of Kinoshita et al. does not make the present invention obvious.

Hecht et al. and Garrison, Jr. are discussed together, as the Examiner has stated that the teachings of these two references are similar. Both of these references teach away from the present invention. The present invention requires a zinc borate, a mixed oxide of zinc and boron, or zinc sulfide, or a mixture of any two or more of the foregoing, while Hecht et al. and Garrison, Jr. teach away from the use of such zinc compounds, stating that they were found not to be effective (Hecht et al., column 1, lines 51-55; Garrison, Jr., column 1, lines 37-41). Additionally, both Hecht et al. and Garrison, Jr. are narrowly drawn, concerning only polyethylene terephthalates. Thus, their combination with those primary references that teach only polyamides (Fuhr et al., Nakahashi et al., Ogo et al., and Tjahjadi et al.) is more strongly disfavored.

There is no motivation to combine Frye with any of the cited primary references. At column 2, lines 12-15, Frye states, "exceptional flame retardancy can be achieved in certain compositions of the present invention without the use of a halogen." Since all of the primary references teach the use of one or more halogenated flame retardants, Frye teaches away from

CASE FR-7095

the present invention.

Myszak, Jr. does not teach homopolymers of polypropylene having any melt flow characteristics, so combination of Myszak, Jr. with any of the primary references would not yield the presently claimed invention, since none of the primary references teaches polypropylene having any melt flow characteristics either, assuming there were a motivation or suggestion to combine any of the primary references with Myszak, Jr. Combination of Myszak, Jr. with Kyo et al. would not make the present invention obvious, assuming that there were any motivation or suggestion for doing so, because Kyo et al. concerns mixtures of polyesters and polyamides, while the present invention does not include mixtures of polyamides and polyesters; Myszak, Jr. only teaches blends of polypropylene and polyethylene (column 2, lines 12-16). Ogo et al. teaches a polyamide with a maximum level of boiling water-soluble components, as measured by immersing the polyamide in a boiling water at 100°C for 24 hours is not more than 0.25% by weight; nothing in Myszak, Jr. suggests that its flame retardant mixtures, when including a polyamide, can meet such a standard.

Bryant et al. teaches powdered masterbatches for forming adhesives. There is no motivation to combine such a reference with a reference that teaches molding compositions (primary references Fuhr et al. and Tjahjadi et al.). Combining Bryant et al. with any of the primary references would not yield the presently claimed invention, because none of the primary references teaches a polypropylene homopolymer with a melt flow index of not more than about 5 grams/10 minutes, nor does Bryant, and the combination of references would not have rendered such a feature obvious. Additionally, Bryant et al., much like Mathews et al. and Kinoshita et al., does not teach any flame retardant at all in the compositions therein. *All* of the primary references teach the use of a halogenated flame retardant, therefore there is no suggestion or motivation to combine any of the primary references with Bryant et al.; thus, any of the primary references in view of Bryant et al. does not make the present invention obvious.

Kamei et al. teaches that a polyolefin to be blended with a polyamide must be modified to be compatible with the polyamide (column 5, lines 9-11). This teaches away from the present invention, which allows for admixture of polyamides with polypropylene without modification of the polypropylene. Thus, there is no motivation to combine Kamei et al. with any of the primary references of the invention. There is, naturally, even less motivation to combine Kamei et al. with the primary reference that is directed to polyesters rather than polyamides (Chisolm et al.). Moreover, Kamei et al. also teaches away from the present invention regarding melt flow index. At column 8, lines 56-65, it is taught that a melt

CASE FR-7095

flow index higher than 10 grams/10 minutes is preferred, as an undesirable property is observed in the range of 1 to 10 grams/10 minutes. This is clearly different than in the claimed invention, where polypropylene homopolymer with a melt flow index of not more than about 5 grams/10 minutes is desirable.

Basset et al. is directed to compositions that contain mixtures of a polyamide and a polyolefin. There is no motivation to combine this reference with primary reference Chisolm et al., which is concerned with sulfonated polyesters. Combination of Basset et al. with Kyo et al. would not make the present invention obvious, assuming that there was any motivation or suggestion for doing so, because Kyo et al. concerns mixtures of polyesters and polyamides, while the present invention does not include mixtures of polyamides and polyesters. Combination of Tjahjadi et al. with Basset et al., even if there were a suggestion or motivation for doing so, would not yield the present invention, because neither reference teaches zinc borates or zinc oxides, a feature of the present claims. Tjahjadi also requires the presence of a pyro/polyphosphate in order to improve the electrical properties of the composition (column 1, lines 48-53); combination of Basset et al. and Tjahjadi et al. would not lead one of ordinary skill to omit the pyro/polyphosphate and still expect improved electrical properties. Fuhr et al. does not teach homopolymers of propylene, and the preference in Basset et al. for propylene homopolymer teaches away from combining these two references. No motivation or suggestion to combine Nakahashi with Basset et al. exists: the compositions in Nakahashi et al. concern electrical applications, while those of Basset et al. are directed to automobile fenders. Ogo et al. teaches a polyamide with a maximum level of boiling water-soluble components, as measured by immersing the polyamide in a boiling water at 100°C for 24 hours is not more than 0.25% by weight; nothing in Basset et al. suggests that its mixtures of polyamide and polyolefin can meet such a standard.

Rejected Claims 60-69, directed to flame retardant additive compositions, are not obvious over the prior art. Of the cited primary references, only Kyo et al. and Chisolm et al. even suggest additive compositions. The only secondary reference that teaches additive compositions is Frye. There is no motivation whatsoever to combine Frye with either Kyo et al. or Chisolm et al. because Frye, at column 2, lines 12-15, "exceptional flame retardancy can be achieved in certain compositions of the present invention without the use of a halogen." One of ordinary skill in the art would be led away from the flame retardant additive compositions of the present invention, all of which contain at least one organic halogen-containing flame retardant, by the teachings of Frye.

CASE FR-7095

In light of the foregoing remarks, the case is submitted to be in condition for immediate allowance. Prompt notification to this effect would be sincerely appreciated.

If any matters remain that require further consideration, the Examiner is requested to telephone the undersigned at the number given below so that such matters may be discussed, and if possible, promptly resolved. The undersigned is acting pursuant to Rule 34.

Respectfully submitted,



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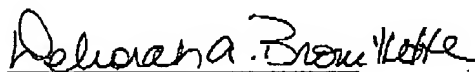
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Dec. 12, 2003

Date



Deborah A. Brouillette